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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/827,074	04/19/2004	Tomoki Nobuta	WAKAB76.006AUS	1881
20995 7590 10/15/2007 KNOBBE MARTENS OLSON & BEAR LLP 2040 MAIN STREET FOURTEENTH FLOOR IRVINE, CA 92614			EXAMINER WANG, EUGENIA	
			ART UNIT 1795	PAPER NUMBER
			NOTIFICATION DATE 10/15/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/827,074

Applicant(s)

NOBUTA ET AL.

Examiner

Eugenia Wang

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. In response to the amendment received September 27, 2007:
 - a. Claims 1-9 and 20 have been cancelled as per Applicant's request. Claims 10-19 are pending.
 - b. The previously indicated subject matter has been withdrawn, and a new grounds of rejection has been made. Thus this action is non-final.

Drawings

2. Figures 1-3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 10-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6225009 (Fleischer et al.) in view of US 6461772 (Miyake et al.).

As to claims 10, 11, 14, and 15, Fleischer et al. teach an electrochemical cell comprising an anode and a cathode (col. 2, lines 60-61). Both anode and cathode contain proton-conducting material, which may be a solid, a gel, a polymer, or an aqueous solution (col. 5, lines 54-56). Furthermore, it is taught that a cation or anion exchange material in the form of a sheet or resin is mixed with the materials of the cathode or anode mix (col. 12, lines 1-6). Fleischer et al. embodies several of electrolytes, where in at least some are inherently proton source containing and proton-ionizing. The particular example focused on is polyvinyl sulfuric acid (col. 14, lines 43-57, more specifically lines 52-53).

Where applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 U.S.C. 102 and 103, expressed as a 102/103 rejection.

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993).

"In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)

In the case of the instant application the basis for expectation of inherency is that the embodiment as taught by Fleischer et al. is an electrolyte exemplified by the instant

Art Unit: 1795

application (p 29, line 17). Therefore, it would be expected that the same electrolytic material would have the same inherent properties (being a proton source and proton ionizing), especially in light of the fact that proton-ionizing has been mentioned generally as a characteristic but has not clearly exemplified.

The Examiner requires applicant to provide that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product.

Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that required with respect to product-by-process claims. In re Fitzgerald, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA, 1977)).

Furthermore, Fleischer et al. teach an example that has three bipolar batteries connected in series, as indicated by the voltage output reported (the battery being at 1.66 volts or 0.553 volts per cell) (as applied to claims 14 and 15) (col. 18, line 57-68; col. 19, lines 1-6).

Fleischer et al. do teach that the anion exchange resin is a fiber.

Miyake et al. teaches a battery diaphragm (separator) with chemical resistance, mechanical strength, and ion selective permeability (ion-exchange for cation and/or anion purposes) (col. 1, lines 5-14). It is noted that within this ion-exchange diaphragm that fibers are used (col. 7, lines 23-34). The motivation for having fibers within an ion exchange membrane is that it mechanically strengthens the ion exchange resin (col. 7,

Art Unit: 1795

lines 29-33). Therefore it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to use an ion-exchange resin (for both cation and anion resins) with fibers, as fibers mechanically strengthen the resin. (Note, although ion-exchange resin is drawn to a separator, it is used for the same purpose as an ion-exchange resin within a cathode or anode and clearly displays desirable properties with the added mechanical strength.)

As to claims 12 and 18, Fleischer et al. teach that the anode includes a source of proton during discharge and the cathode includes a compound which form an electrochemical battery couple with the anode (col. 2, lines 62-64; col. 10, lines 21-55). Furthermore, in a rechargeable version of the electrochemical cell, the anode provides hydrogen ions (protons) in a discharge mode and accepts hydrogen ions (protons) during the charge mode (meaning the cathode accepts hydrogen ions in a discharge mode and provides hydrogen ions in a charge mode) (col. 3, lines 4-13). In this manner, protons are exclusively involved in a redox reaction of the active materials associated with the charge/discharge in both electrodes.

As to claims 13 and 19, Fleischer et al. teach that electrolytes are exemplified by heteropolyacids (col. 14, lines 43-49). Another material exemplified (as relied upon in the rejection of claim 1) is polyvinylsulfuric acid (col. 14, lines 52-53).

As to claims 16 and 17, Fleischer et al. teach an example that has three bipolar battery cells connected in series, as indicated by the voltage output reported (the battery being at 1.66 volts or 0.553 volts per cell) (as applied to claims 14 and 15) (col.

Art Unit: 1795

18, line 57-68; col. 19, lines 1-6). (Such batteries are "stacked" in some manner with respect to one another, as they are connected in series.)

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eugenia Wang whose telephone number is 571-272-4942. The examiner can normally be reached on 7 - 4:30 Mon. - Thurs., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EW


GREGG CANTELMO
PRIMARY EXAMINER

10/10/07